AD_____

Award Number: DAMD17-99-1-9467

TITLE: Soy Supplementation and Prostate Cancer Prevention

PRINCIPAL INVESTIGATOR: Electra Paskett, Ph.D.

CONTRACTING ORGANIZATION: Wake Forest University School of Medicine
Winston Salem, North Carolina 27157

REPORT DATE: March 2000

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
Distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	March 2000	Annual (15 Feb 99 - 14 Feb 00)

4. TITLE AND SUBTITLE
Soy Supplementation and Prostate Cancer Prevention

5. FUNDING NUMBERS
DAMD17-99-1-9467

6. AUTHOR(S)
Electra Paskett, Ph.D.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Wake Forest University School of Medicine
Winston Salem, North Carolina 27157

E-MAIL:
epaskett@wfubmc.edu

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; Distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 Words)*

This project is conducting a randomized double-blind clinical trial to assess the ability of a soy protein dietary supplement to reduce prostate cancer risk in older men. A total of 120 men (60 white men and 60 African-American men) aged 50 years or older with high PSA levels but normal prostate biopsies will be randomized into one of two groups (soy protein supplementation with isoflavones or casein protein supplementation). The specific aims are: 1) to determine the impact of the interventions, including changes in clinical (PSA levels and prostate volume) and intermediate (Ki-67, apoptosis, sex-steroid receptors, angiogenesis, antioxidant enzyme expression) markers of prostate cancer risk; 2) to assess soy protein effects on hormone levels, plasma lipids/lipoproteins and blood pressure; and 3) to evaluate changes in health-related quality of life, including urinary symptoms and sexual functioning. This project involves a multidisciplinary team affiliated with the cooperative group, Cancer and Leukemia Group B (CALGB), which has substantial expertise in controlled clinical trials, oncology, epidemiology, health-related quality of life, biostatistics, and nutrition. Contacts have been made to begin recruitment phase of the study. NCI approval of the CALGB protocol delayed start-up of this study; however, recruitment will start in March 2000.

14. SUBJECT TERMS
Prostate Cancer

15. NUMBER OF PAGES
9

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

N/A Where copyrighted material is quoted, permission has been obtained to use such material.

N/A Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

N/A Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

N/A In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and use of Laboratory Animals of the Institute of Laboratory Resources, national Research Council (NIH Publication No. 86-23, Revised 1985).

X For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

N/A In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

N/A In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

N/A In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

Electa D. Paskett 3-13-00

PI - Signature Date

TABLE OF CONTENTS

INTRODUCTION:

Soybeans and other legumes contain large amounts of plant estrogens known as isoflavones. Specific isoflavones found in soy (genistein and diadzein) have been implicated in reducing breast, colon, and prostate cancer risk in both laboratory-based studies (1). Strong evidence for an effect on prostate cancer risk comes from cross-cultural studies which have shown that prostate cancer rates are much lower in the Pacific Rim countries where soy products comprise a much higher proportion of the normal diet compared to the United States (2). This study proposes to conduct a randomized double-blind clinical trial which will assess the ability of a soy protein dietary supplement (a rich source of isoflavones) to reduce prostate cancer risk in older men. This project will randomize 120 men (60 white men and 60 African-American men) aged 55 years or older with high PSA levels but normal prostate biopsies into one of two groups (soy protein supplementation with isoflavones or casein protein supplementation). The specific aims of the study are: 1) to determine the impact of the interventions on the prostate, including changes in clinical (PSA levels and prostate volume) and intermediate (Ki-67, apoptosis, sex-steroid receptors, angiogenesis, antioxidant enzyme expression) markers of prostate cancer risk (3,4); 2) to assess soy protein effects on hormone levels, plasma lipids/lipoproteins and blood pressure; and 3) to evaluate changes in health-related quality of life, including urinary symptoms and sexual functioning. This project will involve the collaborative efforts of a multidisciplinary team affiliated with the cooperative group, Cancer and Leukemia Group B (CALGB), which has substantial expertise in the areas of controlled clinical trials, oncology, epidemiology, health-related quality of life, biostatistics, and nutrition. If positive results are obtained in this trial, soy supplementation may provide an important tool for the prevention of prostate cancer.

BODY:

ACCOMPLISHMENTS ASSOCIATED WITH THE APPROVED STATEMENT OF WORK

Task 1:

a. The study forms and questionnaires have been developed and approved by the CALGB and NCI.
b. The Soy and Casein shipments are being accepted from PTI by the study, in powder form, rather than the original juice box form.
c. Staff training sessions have been held in conjunction with the annual meetings of the CALGB. All sites have not had the opportunity to attend; however staff have been identified and contacted at each of the remote sites. Training for the sites that did not attend the annual meetings will be done via phone.

Task 2:

a. The recruitment phase had been on hold until the NCI approved the collaborative protocol with the CALGB. The four sites will begin recruitment shortly.
b. Discussion and approval from the urology clinic physicians to begin the screening of their patients coming in for biopsies has been accomplished.

From this point, task 2 c, there is nothing to report for this annual reporting period. This is due to the delay in the approval of this CALGB protocol with the NCI.

KEY RESEARCH ACCOMPLISHMENTS:

Sites have been identified; an NCI approved protocol and questionnaires have been developed; product has been received at the Wake Forest University School of Medicine; pathology and urology contacts at each site have been finalized. A study name, logo and brochure have been developed. We have also secured arrangements with MD Anderson to use a Food Frequency with added soy-containing foods for this study.

REPORTABLE OUTCOMES:

None to report during this annual reporting period.

CONCLUSIONS:

This annual reporting period, does not represent the usually progressive and timely working standards of the Wake Forest University School of Medicine. The efforts to collaborate with the NCI and CALGB in this study delayed the start of task 2 of the statement of work. During the next annual reporting period we will have recruited our sample and have 3 and 6 month data on a good part of our sample.

REFERENCES:

1. Coward, L., et al., The antitumor isoflavones, genistein and diadzein, in soybean foods of American and Asian diets. Journal of Agriculture and Food Chemistry, 1993. 41:p. 1961-1967.

2. Adlercreutz, H. and W. Mazur, Phyto-estrogens and Western diseases. Annals of Medicine, 1997. 29: p.95-120.

3. Crawford, E.D., E..P. DeAntoni, and C.A. Ross, The role of prostate-specific antigen in the chemoprevention of prostate cancer. Journal of Cellular Biochemistry, 1996. 25S: p. 149-155.

4. Kelloff, G.J., et al., Risk biomarkers and current strategies for cancer chemoprevention Journal of Cellular Biochemistry, 1996. 25S: p. 1-14.

APPENDICES:

None.